

ARIZONA CLIMATE CHANGE ADVISORY GROUP MEETING

#5 May 16, 2006





TODAY'S AGENDA

- 1. CALL TO ORDER
- 2. REVIEW OF MEETING AGENDA
- 3. APPROVAL OF FOURTH CLIMATE CHANGE ADVISORY GROUP (CCAG)
 MEETING SUMMARY
- 4. REVIEW OF CCAG PROGRESS AND NEXT STEPS
- 5. REVIEW OF ANALYTICAL RESULTS FOR POLICY PROPOSALS AND APPROVAL OF POLICY PROPOSALS FOR FINAL REPORT
- 6. DISCUSSION OF GHG REDUCTION GOALS AND TIMELINE PROPOSALS
- 7. REVIEW OF PROCESS AND SCHEDULE FOR COMPLETING DRAFT FINAL REPORT
- 8. CALL TO THE PUBLIC
- 9. ANNOUNCEMENTS, DISCUSSION OF AGENDA ITEMS AND TIME FOR NEXT MEETING

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REVIEW OF TEN STEP PLAN

- 1. DEVELOP INITIAL GHG INVENTORIES AND FORECASTS
- 2. IDENTIFY CONCEIVABLE GHG MITIGATION OPTIONS
- 3. IDENTIFY INITIAL PRIORITIES FOR EVALUATION
- 4. EVALUATION OF GHG SAVINGS, COSTS AND OTHER ISSUES FOR INDIVIDUAL OPTIONS
- 5. IDENTIFY BARRIERS, ALTERNATIVE POLICY DESIGN NEEDS FOR INDIVIDUAL OPTIONS
- 6. MODIFY, ADD OR SUBTRACT OPTIONS AS NEEDED
- 7. EVALUATE CUMULATIVE RESULTS OF OPTIONS
- 8. ITERATE TO CONSENSUS, WITH VOTES AS NEEDED
- 9. AGGREGATE OPTIONS INTO IMPLEMENTATION SCENARIOS
- 10. FINALIZE RECOMMENDATIONS AND REPORT LANGUAGE

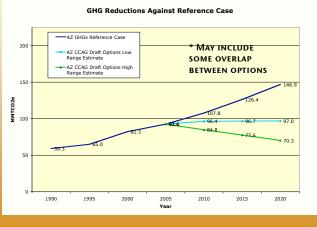
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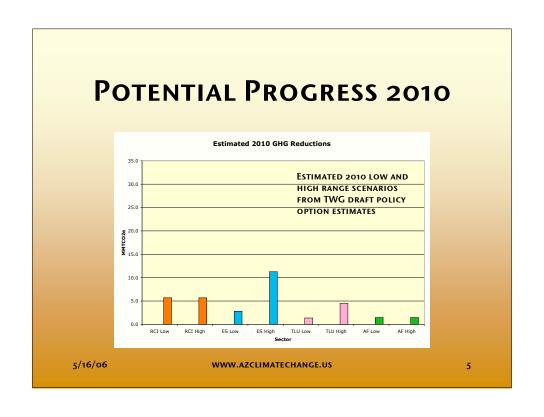
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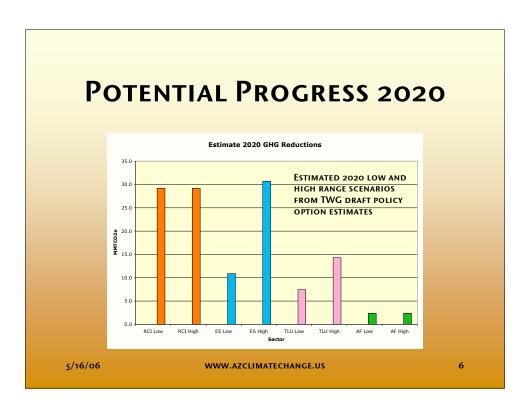
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DRAFT CUMULATIVE RESULTS LOW & HIGH RANGE SCENARIOS*



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DRAFT POLICY OPTIONS

Sector	# OPTIONS	
ES	12	
RCI	12	
TLU	6	
AF	15	
СС	5	
TOTAL	50	

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DECISION CRITERIA

- 1. GHG REDUCTION POTENTIAL (CO2E)
- 2. DIRECT COST PER TON GHG REMOVED
- 3. ANCILLARY ISSUES
 - CO-BENEFITS, COSTS, ETC.
- 4. FEASIBILITY ISSUES
 - TECHNICAL, ECONOMIC, MARKET,
 PROGRAMMATIC, POLITICAL

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VOTING PROCEDURES

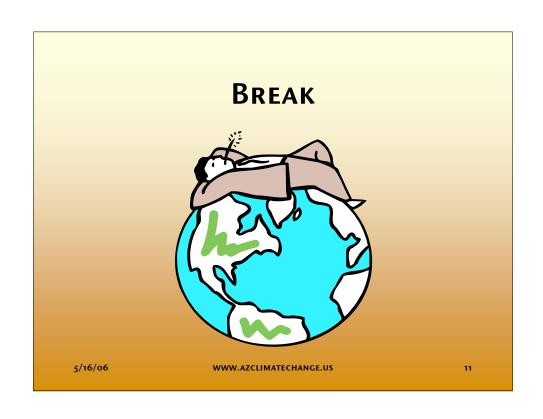
- 1. REVIEW FULL LIST OF DRAFT POLICY OPTIONS
 - 1. IDENTIFY CONSENSUS OPTIONS (SUBJECT TO TECHNICAL COMPLETION)
 - 2. PARK REMAINING OPTIONS FOR LATER DISCUSSION
- 2. RETURN TO REMAINING DRAFT POLICY OPTIONS
 - 1. IDENTIFY SPECIFIC BARRIERS TO CONSENSUS FOR INDIVIDUAL OPTIONS
 - 2. IDENTIFY POTENTIAL ALTERNATIVE POLICY APPROACHES FOR INDIVIDUAL OPTIONS AS POSSIBLE
 - 3. CHECK LEVEL OF CONSENSUS FOR APPROVAL OF PROPOSED ALTERNATIVES, IF ANY
 - 4. CHECK LEVEL OF CONSENSUS FOR FURTHER DEVELOPMENT OF DRAFT OPTIONS FOR THE FINAL CCAG MEETING

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VOTING LEVELS

- 1. <u>CONSENSUS</u> NO OBJECTION TO APPROVAL OF MEASURE IN CONCEPT AND DESIGN
- 2. <u>SUPER MAJORITY</u> NO MORE THAN FIVE OBJECTIONS
- 3. MAJORITY LESS THAN HALF OF THE CCAG
 OBJECTS
- 4. MINORITY VIEWS EXPRESS BARRIERS TO CONSENSUS

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DRAFT RCI OPTIONS - TABLE 5 Policy Name RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL Demand-Side Efficiency Goals, Funds, Incentives, and Programs State Leadership Programs 2010: 3.1 2020: 15.1 2010: 0.04 2020: 0.4 2010: 0.2 2020: 1.0 2010: 0.3 2020: 2.2 2010: 0.2 2020: 3.1 RCI-1 - \$36 - \$4 RCI-2 RCI-3 Appliance Standards - \$66 Building Standards/Codes for Smart RCI-4 - \$18 Building Standards/Codes for Smart Growth "Beyond Code" Building Design Incentives and Programs for Smart Growth Distributed Generation/Combined Heat and Power Distributed Generation/Renewable Engroy Ambiestations - \$17 RCI-5 2010: 0.4 2020: 2.7 2010: 0.1 2020: 2.1 2010: 1.1 2020: 1.5 RCI-6 - \$25 \$31 RCI-7 Energy Applications Electricity Pricing Strategies RCI-8 -\$63 Mitigating High Global Warming Potential (GWP) Gas Emissions (HFC, PFC) Demand-Side Fuel Switching Industrial Sector GHG Emissions Trading or Commitments Solid Waste, Wastewater, and Water Use Management RCI-11 RCI-12 5/16/06 WWW.AZCLIMATECHANGE.US

DRAFT FORESTRY OPTIONS TABLE 9

#	Policy Name	GHG Savings (MMtCO₂e)	Cost Effectiveness (\$/tCO ₂ e)
	FORESTRY		
F-1	Forestland Protection from Developed Uses	2010: 0.3 2020: 0.3	TBD
F-2	Reforestation/Restoration of Forestland	2010: 0.02 2020: 0.2	TBD
F-3a	Forest Ecosystem Management – Residential Lands	2010: 0.5 2020: 0.5	-\$56
F-3b	Forest Ecosystem Management – Other Lands	2010: 0.2 2020: 0.2	-\$56
F-4	Improved Commercialization of Biomass Gasification and Combined Cycle	TBD	TBD

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DRAFT AGRICULTURE OPTIONS - TABLE 9

#	Policy Name	GHG Savings (MMtCO ₂ e)	Cost Effectiveness (\$/tCO ₂ e)
	AGRICULTURE		
A-1a	Manure Management – Manure Digesters	2010: 0.1	\$6.83
		2020: 0.4	(dairies only)
A-1b	Manure Management - Land Application	TBD	TBD
A-2	Biomass Feedstocks for Electricity or	2010: 0.04	-\$63
	Steam/Direct Heat	2020: 0.1	
A-3	Ethanol Production (this option is included in	2010: 0.49	TBD
	total TLU GHG results and excluded from AF	2020: 0.64	
	total GHG results)		
A-4	Change Feedstocks (optimize for CH4 and/or	2010: 0.03	\$165
	N ₂ O reduction)	2020: 0.07	
A-5	Reduce Non-Farm Fertilizer Use	N/A	N/A
A-6	Grazing Management	TBD	TBD
A-7	Convert Land to Grassland or Forest	TBD	TBD
A-8	Agricultural Land Protection from Developed	2010: 0.2	TBD
	Uses	2020: 0.5	
A-9	Programs to Support Local Farming/Buy Local	2010: 0.003	TBD
		2020: 0.01	

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DRAFT TLU OPTIONS - TABLE 7

#	Policy Name	GHG Savings (MMtCO2e)	Cost-Effectiveness (\$/tCO2e)	Next Steps (Completed/Pending)
	PASSENGER VEHICLE GHG EMISSION RATES			
TLU-1	California GHG Emission Standards	2010: 0-0.3 2020: 5.6	-\$94.58	
	LAND USE AND LOCATION EFFICIENCY			
TLU-2	Smart Growth Bundle of Options	2010: 0.6- 3.2 2020: 0.7- 4.0	Net Savings	
	INCREASING LOW- GHG TRAVEL OPTIONS			
TLU-3	Multimodal Transit Bundle of Options FREIGHT	TBD	TBD	
TLU-4	Reduction of Vehicle Idling	2010: 0.3- 0.5 2020: 0.5- 0.7	-\$61 to -\$107	
	(new TLU-4 combines former TLU-4 and -5)			
	FUELS			
	Standards for Alternative Fuels (Ethanol Production Option A3 is included under total TLU GHG results and excluded from total AF GHG results)	2010: 0.49- 0.49 2020: 0.64- 4.03	N/A	
TLU-6	Gasoline Tax	N/A	N/A	

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DRAFT ES OPTIONS - TABLE 3

#	Policy Name	GHG Savings (MMtCO ₂ e)	Cost Effectiveness (\$/tCO ₂ e)
	RENEWABLE AND LOW- EMITTING ENERGY		
ES-1	Environmental Portfolio Standard / Renewable Energy Standard and	1a(0) 2010: 0.80 2020: 4.4	\$13
	Tariff	1a(1) 2010: 1.39 2020: 8.0	\$8
		1a(2) 2010: 1.42 2020: 7.7	\$12
		1b 2010: 2.31 2020: 9.2	\$4
		1c 2010: 4.19 2020: 16.4	\$6
ES-2	Public Benefit Charge Funds	2010: 1.46 2020: 4.1	\$280
ES-3	Direct Renewable Energy Support	(via RCI-7)	(via RCI-7)
	(including Tax Credits and	2010: 0.1	\$31
	Incentives, R&D, and siting/zoning)	2020: 2.1	

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DRAFT ES OPTIONS - TABLE 3

#	Policy Name	GHG Savings (MMtCO ₂ e)	Cost Effectiveness (\$/tCO ₂ e)
	EMISSIONS POLICIES		
ES-4	GHG Cap and Trade	(1) 2010: -0.28 2020: 4.4	\$7
		(2) 2010: 0.17 2020: 2.0	\$10
		(3) 2010: -0.2 2020: 16.5	\$17
		(4) 2010: 0.18 2020: 18.5	\$19
ES-5	Generation Performance Standards	2010: 5.63 2020: 10.2	\$29
ES-6	Carbon Intensity Targets	2010: 0.0 2020: 14.0	\$44
ES-7	Voluntary Utility CO2 Targets and/or Trading	2010: 0.0 2020: 2.2	\$29
ES-8	CO2 Tax	2010: 0.53 2020: 2.4	\$3

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DRAFT ES OPTIONS - TABLE 3

	#	Policy Name	GHG Savings (MMtCO ₂ e)	Cost Effectiveness (\$/tCO ₂ e)
		RENEWABLE AND LOW- EMITTING ENERGY GRID AND UTILITY POLICIES		
	ES-9	Reduce Barriers to Renewables and Clean DG	(via RCI-6) 2010: 0.4 2020: 2.7	(via RCI-6) -\$25
ĺ	ES-10	Metering Strategies		
	ES-11	Pricing Strategies	(via RCI-8)	(via RCI-8)
	ES-12	Integrated Resource Planning	2010: 0.06 2020: 5.4	-\$2

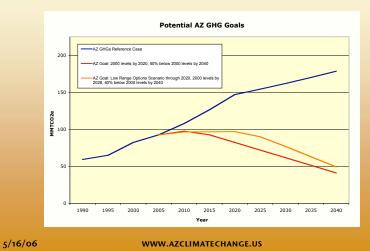
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CROSS CUTTING OPTIONS TABLE 11

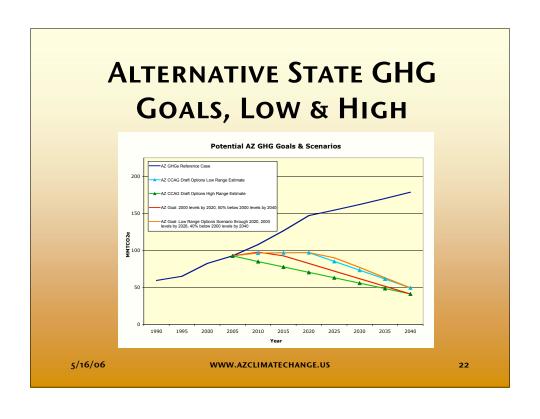
#	Policy Name
	CROSS CUTTING ISSUES
CC-1	State Greenhouse Gas Goals
CC-2	State Greenhouse Gas Reporting
CC-3	State Greenhouse Gas Registry
CC-4	State Climate Action Education
CC-5	State Climate Change Adaptation Strategy

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ALTERNATIVE PROPOSED STATE GHG GOALS



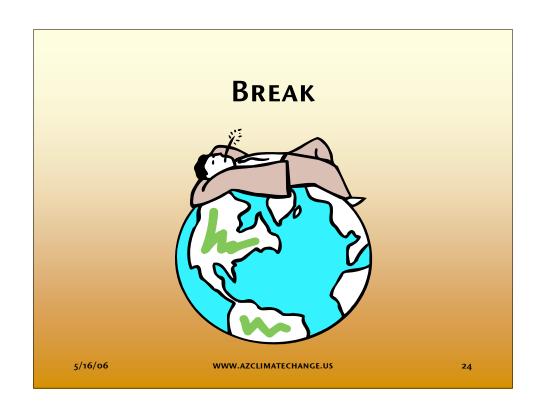




KEY DRIVERS - POST 2020 GHG REDUCTIONS

- ACCELERATED PENETRATION OF EXISTING GHG TECHNOLOGY AND BEST PRACTICES
 - NEW GROWTH KEY IN ARIZONA -- SENSITIVE TO "LOCK INS" VIA LONG TERM CAPITAL INVESTMENT
 - FOCUS ON STATIONARY AND MOBILE SOURCE EFFICIENCY AND RENEWABLES, FOREST LANDS
- FULL DEVELOPMENT AND DEPLOYMENT OF ADVANCED TECHNOLOGIES AND SYSTEMS
 - CARBON STORAGE, HYDROGEN FUELS, ADVANCED RENEWABLES, ADVANCED INDUSTRIAL PROCESS...

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CONTINUATION OF VOTING

- REMAINING OPTIONS
 - RCI
 - -AF
 - -TLU
 - -ES
 - -CC

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NEXT STEPS

- TWGs:
 - FINALIZE TEXT AND ANALYSIS FOR APPROVED POLICY OPTIONS
 - DEVELOP ALTERNATIVE APPROACHES AND ANALYSES AS NEEDED FOR REMAINING DRAFT POLICY OPTIONS

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DRAFT CCAG REPORT

- SUMMARY
 - BACKGROUND, PURPOSE AND GOALS
 - EXECUTIVE ORDER
 - DESCRIPTION OF THE PROCESS
 - KEY FINDINGS OF THE STATE EMISSIONS INVENTORY & FORECAST
 - KEY ISSUES FROM CCAG POLICY DISCUSSIONS
 - POLICY RECOMMENDATIONS & RESULTS
 - AGRICULTURE AND FORESTRY
 - ENERGY SUPPLY
 - RESIDENTIAL, COMMERCIAL, INDUSTRIAL
 - TRANSPORTATION & LAND USE
 - WASTE MANAGEMENT
 - Cross Cutting Issues
- REPORT & APPENDICES

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PUBLIC INPUT, ANNOUNCEMENTS

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AGENDA NEXT MEETING

- Policy options
 - REVIEW OF CUMULATIVE RESULTS OF DRAFT POLICY OPTIONS, APPROVED AND PENDING
 - APPROVAL OF REMAINING DRAFT POLICY OPTIONS
- STATE GHG GOALS
- FINAL REPORT DISCUSSION

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DATE NEXT CCAG MEETING

- JUNE 22, 2006
- 9:30 AM 4 PM
- PHOENIX

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